

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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| Application. No: | 10/059,726 | § | |
| Filed: | January 29, 2002 | § | |
| Inventor(s): | Sundeeep Chandhoke, David Whatley and Denise Riedlinger | § § § § § § | |
| Title: | SYSTEM AND METHOD FOR PREVIEWING A SEQUENCE OF MOTION CONTROL OPERATIONS | § § § § § § § § § § | |
| Examiner: | Pitaro, Ryan F. | § | |
| Group/Art Unit: | 2174 | § | |

Atty. Dkt. No: 5150-64400

REPLY BRIEF

Box: Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir/Madam:

Further to the Appeal Brief filed September 6, 2007 and the Examiner's Answer mailed December 13, 2007, Appellant presents this Reply Brief. Appellant respectfully requests that this Reply Brief be considered by the Board of Patent Appeals and Interferences.

REMARKS

Claims 1, 32, 43, 45, and 46

Appellant re-asserts the arguments previously presented in the appeal brief with respect to the independent claims 1, 32, 43, 45, and 46. Appellant respectfully submits that the Examiner's remarks in the Examiner's Answer fail to overcome these arguments, and do not even address some of the arguments presented. In addition, Appellant submits the following additional remarks with respect these claims.

Claim 1 recites in pertinent part:

displaying information in the first preview window which visually indicates the cumulative motion control performed by the two or more motion control operations, wherein visually indicating the cumulative motion control performed by the two or more motion control operations comprises visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations.

The Examiner admits that, "Compumotor fails to distinctly point out visually indicating a spatial trajectory performed by the two or more motion control operations". (See Examiner's Answer, p. 3 last paragraph – p. 4 first paragraph). The Examiner also admits that, "The Examiner agrees that Rowland is unrelated to the field of motion control and does not even teach a concept of motion control operation perform motion control of a hardware device."

Since Rowland is unrelated to the field of motion control and does not even teach a concept of a motion control operation to perform motion control of a hardware device, Rowland certainly does not, and cannot possibly, remedy Compumotor's failure to teach, "visually indicating a spatial trajectory cumulatively performed by the two or more motion control operations," as recited in claim 1. There are no motion control operations in Rowland, and therefore no spatial trajectory cumulatively performed by two or more motion control operations, nor is there a visual indication of such a spatial trajectory. The references, taken either singly or in combination, simply do not teach this limitation in combination with the other limitations recited in claim 1.

With respect to claims 2-31, 33-42, 44, and 47-49, the Examiner asserted that Appellant's arguments presented in the Appeal Brief amounted to a general allegation that

the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Appellant respectfully disagrees and submits that the arguments did indeed point out how the language of the claims distinguishes over the references. Nevertheless, Appellant provides additional remarks with respect to various ones of these claims below.

Claims 2, 33, and 44

Claim 2 is separately patentable because the cited references do not teach or suggest the limitations of,

- receiving user input to the first preview window to graphically change the cumulative motion control performed by the two or more motion control operations;

- changing one or more of the motion control operations in order to change the cumulative motion control performed by the motion control operations in accordance with the user input; and

- updating the displayed spatial trajectory in the first preview window in order to visually indicate the changed cumulative motion control performed by the motion control operations in accordance with the user input;

- wherein said changing one or more of the motion control operations comprises changing the stored information.

With respect to the limitation of, “receiving user input to the first preview window to graphically change the cumulative motion control performed by the two or more motion control operations,” the Examiner cites Compumotor, p. 6, lines 1-10. The cited portion of the reference generally teaches that the user can select icons that correspond to the motion control activities to be performed and arrange the icons on the computer screen to indicate a desired flow of motion. However, Compumotor does not teach that the user input is received to the first preview window which visually indicates the spatial trajectory, as specifically recited in claim 2. In Compumotor, the user can arrange icons in order to indicate a desired flow of motion, but the user is not given the option to change the cumulative motion control performed by the motion control operations by providing input directly to a preview window in which the spatial trajectory is visually indicated, as recited in claim 2.

With respect to the limitation of, “updating the displayed spatial trajectory in the first preview window in order to visually indicate the changed cumulative motion control

performed by the motion control operations in accordance with the user input,” the Examiner cites, “Rowland, Figure 4a; Dynamic Update”. However, as discussed above, Rowland does not even teach the concept of a motion control operation, nor does Rowland teach displaying a spatial trajectory of motion control operations in a first preview window. FIG. 4A of Rowland is a flowchart illustrating a method of locating the trajectory and source of a projectile. In the “Dynamic Update” feature cited by the Examiner (block 116), Rowland teaches that the trajectory location is updated in response to the observer’s movement.

In contrast, claim 2 recites that user input to graphically change the cumulative motion control performed by two or more motion control operations is received, and a displayed spatial trajectory of the cumulative motion control that is performed is updated in order to visually indicate the change in the cumulative motion control. Rowland’s teaching of updating a trajectory location in response to an observer’s movement, taken either singly or in combination with Compumotor’s disclosure, clearly does not amount to a teaching of the subject matter of claim 2.

Appellant also notes that there is no teaching or suggestion or reasonable expectation of success for combining Rowland’s Dynamic Update in FIG. 4A with Compumotor, as proposed by the Examiner. Nor does the Examiner even suggest what basis there may be for combining the Dynamic Update feature with Compumotor’s disclosure. Appellant respectfully submit that there is no teaching or suggestion in the prior art that would motivate one skilled in the art to combine the references, and furthermore, the combination of references does not teach the subject matter recited in claim 2.

Thus, Appellant respectfully submits that claim 2 is patentably distinct over the cited references. Inasmuch as claims 33, 34, and 44 recite similar limitations as claim 2, Appellant respectfully submits that these claims are also patentably distinct over the cited references.

Claim 7

Claim 7 is separately patentable because the cited references do not teach or suggest the limitations of,

dynamically updating the first preview window in response to selecting each of the two or more motion control operations to visually indicate the effect of selecting each operation;

wherein, for each selected motion control operation, dynamically updating the first preview window in response to selecting the motion control operation comprises dynamically updating the displayed spatial trajectory to indicate a change in the cumulative motion control, wherein the change is caused by the selected motion control operation.

With respect to the recited limitation of, “dynamically updating the first preview window in response to selecting each of the two or more motion control operations to visually indicate the effect of selecting each operation,” the Examiner cites Compumotor, p. 80, Figure 80.1, recalculate. Compumotor teaches here that the user can set up a move using a Move icon. The user can double-click on the Move icon to open a Move profile dialog box that displays the profile of the move. However, Compumotor, taken either singly or in combination with Rowland, does not teach the subject matter of claim 7. In claim 7, the first preview window is dynamically updated in response to selecting each of the two or more motion control operations in order to visually indicate the effect of selecting each operation. For each selected motion control operation, dynamically updating the first preview window in response to selecting the motion control operation comprises dynamically updating the displayed spatial trajectory to indicate a change in the cumulative motion control performed by the motion control operations, wherein the change is caused by the selected motion control operation.

The Examiner relies on Rowland’s Dynamic Update discussed above to teach the recited limitations of dynamically updating the displayed spatial trajectory to indicate the change in the cumulative motion control, wherein the change is caused by the selected motion control operation. However, as argued above, Rowland’s Dynamic Update feature relates to updating a trajectory location in response to an observer’s movement. Rowland’s Dynamic Update feature is entirely unrelated to the display of a spatial trajectory indicating cumulative motion control performed by two or more motion control operations, and entirely unrelated to updating such a displayed spatial trajectory in order to indicate a change in the cumulative motion control. Rowland, taken either singly or in combination with Compumotor, clearly does not teach the recited features of claim 7.

Appellant also notes that there is no teaching or suggestion or reasonable expectation of success for combining Rowland's Dynamic Update in FIG. 4A with Compumotor, as proposed by the Examiner. There is no reason why one skilled in the art would be motivated to combine the references, and even if the references are combined, they still do not teach the features recited in claim 7.

Thus, Appellant respectfully submits that claim 7 is patentably distinct over the cited references. Appellant also respectfully submits the claims 19 and 41 are patentably distinct over the cited references for similar reasons as discussed above with reference to claim 7.

Claim 25

With respect to claim 25, Appellant re-asserts the argument previously presented in the Appeal Brief. Compumotor teaches that the user manually arranges a plurality of icons but does not teach programmatically generating a plurality of icons when creating program instructions for implementing two or more motion control operations, as recited by claims 24 and 25. The Examiner's Answer did not address this argument.

Claim 47

With respect to claim 47, Appellant re-asserts the argument previously presented in the Appeal Brief. The references fail to teach visually indicating a spatial trajectory cumulatively performed by two or more motion control operations. The references also do not teach displaying an animation of the spatial trajectory. With regard to this limitation, the Examiner cites FIG. 4A of Rowland, which displays the trajectory of a projectile that has been fired, not a preview of a spatial trajectory for two or more motion control operations. Furthermore, Rowland does not teach displaying an animation of the projectile trajectory. The Examiner's Answer did not address this argument.

Claim 49

With respect to claim 49, Appellant re-asserts the argument previously presented in the Appeal Brief. Claim 49 recites that user input is received to the displayed spatial trajectory in order to graphically change the cumulative motion control performed by the

two or more motion control operations. Compumotor nowhere teaches the concept of receiving user input to a displayed trajectory in order to change the motion control performed by a motion control operation. Nor does Compumotor, taken either singly or in combination with Rowland, teach the concept of receiving user input to a displayed trajectory in order to change the cumulative motion control performed by two or more motion control operations. The Examiner's Answer did not address these arguments.

Claim 6

With respect to claim 6, Appellant re-asserts the argument previously presented in the Appeal Brief. As argued in the Appeal Brief, Roe is not related to the field of computer-based motion control and does not teach a method for showing motion control in a three dimensional view, as asserted by the Examiner. Appellant respectfully submits that the limitations recited in claim 6 are not taught by the cited references, taken either singly or in combination.

Appellant also submits that it is improper to rely on Roe as a basis for rejection of the present claims because Roe is not in the field of Appellant's endeavor (computer-based motion control) and is not reasonably pertinent to the particular problem with which the present inventors were concerned (previewing cumulative movement of two or more motion control operations).

Claim 8

With respect to claim 8, Appellant re-asserts the argument previously presented in the Appeal Brief. The Examiner states that, "Compumotor-Rowland fails to distinctly point out a method, which includes a capture operation. However, Blowers teaches a capture operation (Figure 2) to be performed in one or more of the motion control operations." However, Appellant disagrees that Blowers teaches a capture operation to be performed in one or more of the motion control operations. The cameras illustrated in FIG. 2 are operable to capture images, but this is not at all the same as receiving user input to configure one or more capture operations to be performed in one or more motion control operations. Appellant can find no teaching in Blowers regarding these limitations recited in claim 8.

Claims 11 and 35

With respect to claims 11 and 35, Appellant re-asserts the argument previously presented in the Appeal Brief. Claim 11 is separately patentable because the cited references do not teach or suggest the limitations of,

wherein said visually indicating the spatial trajectory cumulatively performed by the two or more motion control operations comprises interactively tracing the spatial trajectory performed by the two or more motion control operations.

The Examiner asserts that these features are taught by Blowers at Col. 12, lines 57-60. However, this portion of Blowers reads as follows:

The user is allowed to single step through the central sequence for debug/setup purposes.

Individual steps may be bypassed in single step mode or commented out in run mode.

Appellant submits that this teaches nothing regarding interactively tracing the spatial trajectory performed by two or more motion control operations. As described in the present specification:

In another embodiment, the user may be able to request the motion control prototyping environment to simulate the motion trajectory such that the trajectory is interactively traced out in the preview window(s) as the user watches. For example, the preview window(s) may initially be empty (or may only display a coordinate grid), and the motion trajectory may gradually be plotted in the preview window(s). This may help the user to understand how the motion control device moves through space over time. This type of simulation may aid the user in performing offline development and prototyping; in other words, the user may watch a simulation of the motion even if no motion control device is coupled to the computer system.

Neither Blowers nor the other references teach the concept of interactively tracing a spatial trajectory in this manner.

Inasmuch as claim 35 recites similar limitations as claim 11, Appellant respectfully submits that this claim is also patentably distinct over the cited references.

Claim 12

With respect to claim 12, Appellant re-asserts the argument previously presented in the Appeal Brief. Claim 12 is separately patentable because the cited references do not teach or suggest the limitations of,

receiving user input specifying rate information regarding a desired rate at which to trace the trajectory; and
interactively tracing the trajectory performed by the two or more motion control operations at a rate in accordance with the specified rate information.

As described above, Blowers does not teach interactively tracing a spatial trajectory. Blowers also does not teach these additional limitations regarding receiving user input specifying rate information indicating a desired rate at which to trace the trajectory and interactively tracing the trajectory performed by the two or more motion control operations at a rate in accordance with the specified rate information.

VIII. CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-49 was erroneous, and reversal of the Examiner's decision is respectfully requested.

The Commissioner is authorized to charge any fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5150-64400/JCH. This Reply Brief is submitted with a return receipt postcard.

Respectfully submitted,

/Jeffrey C. Hood/

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